

**University of Guelph
Department of Population Medicine**

(POPM*6540): Concepts in Environmental Public Health

Winter 2018

Course Coordinator:

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Office hours: contact for appointment

Calendar description:

This course covers the main concepts of environmental public health including basic elements of environmental toxicology, risk analysis, air and water quality, food safety, waste management, occupational health and ecosystem health.

Teaching/learning strategy:

Learning materials and opportunities will be provided through a combination of lectures, assignments, case studies as well as student presentations. Readings from the required textbook will be assigned throughout the course. Students will be expected to be able to discuss the material in class. Cooperative and group discussion will be emphasized.

Course objectives:

At the end of the course, students are expected to be able to:

1. Identify potential environmental hazards.
2. Describe how chemical and microbiological contaminants in air, water and food affect public health and approaches that can be used to reduce negative impact on health.
3. Distinguish between hazards and risks; understand and apply the basic principles of environmental risk analysis; evaluate basic exposure data and characterize risk.
4. Describe national and provincial regulatory programs, guidelines and authorities that control environmental health issues.
5. Discuss the impact of global climate change on human health and approaches to mitigation of these effects.

6. Participate in group discussion and case studies to develop skills in environmental public health.
7. Write a grammatically correct, well-written paper on a specific topic in environmental public health.

Evaluation:

Individual assignment	15%	Due January 28
Group assignment / presentation	15%	Various dates during semester
Food safety take-home Assignment (small group or individual)	20%	Due March 4
Essay	35%	Due March 18
Essay Presentation	15%	Various dates March / April

Assignments:

Each student will complete an individual assignment on environmental epidemiology. Small groups of students will each make one presentation to the class and prepare a written report on an environmental health hazard and associated public health intervention. Students individually or in small groups (up to 3) will complete a take-home food safety / foodborne outbreak investigation assignment. Instructions for assignments will be provided.

Essay:

Each individual student will submit a paper and make a presentation on a topic in environmental public health. Instructions for the essay will be provided in the second week of classes. The paper will be no more than 12 pages (12 point, double spaced, 1 inch margins), not including references, tables and figures. Any refereed reference style is acceptable. The paper is due Sunday, March 18, 2018. The presentations will take place in the latter part of the course.

E-mail Communication:

As per university regulations, all students are required to check their <mail.uoguelph.ca> e-mail account regularly: e-mail is the official route of communication between the University and its students.

Accessibility:

The University promotes the full participation of students who experience disabilities in their academic programs. To that end, the provision of academic accommodation is a shared responsibility between the University and the student.

When accommodations are needed, the student is required to first register with Student Accessibility Services (SAS). Documentation to substantiate the existence of a disability is required, however, interim accommodations may be possible while that process is underway.

Accommodations are available for both permanent and temporary disabilities. It should be noted that common illnesses such as a cold or the flu do not constitute a disability.

Use of the SAS Exam Centre requires students to book their exams at least 7 days in advance, and not later than the 40th Class Day.

More information: <https://wellness.uoguelph.ca/accessibility/>

When You Cannot Meet a Course Requirement

When you find yourself unable to meet an in-course requirement because of illness or compassionate reasons, please advise the course instructor in writing, with your name, id#, and e-mail contact. See the graduate calendar for information on regulations and procedures for Academic Consideration:

https://www.uoguelph.ca/registrar/calendars/graduate/2017-2018/genreg/sec_d0e2562.shtml

Drop Date

The last date to drop one-semester courses, without academic penalty, is March 9, 2018. Refer to the Graduate Calendar for the schedule of dates:
<https://www.uoguelph.ca/registrar/calendars/graduate/2017-2018/sched/index.shtml>

Academic Misconduct

The University of Guelph is committed to upholding the highest standards of academic integrity and it is the responsibility of all members of the University community – faculty, staff, and students – to be aware of what constitutes academic misconduct and to do as much as possible to prevent academic offences from occurring. University of Guelph students have the responsibility of abiding by the University's policy on academic misconduct regardless of their location of study; faculty, staff and students have the responsibility of supporting an environment that discourages misconduct. Students need to remain aware that instructors have access to and the right to use electronic and other means of detection. The Academic Misconduct Policy is detailed in the Graduate Calendar:

https://www.uoguelph.ca/registrar/calendars/graduate/2017-2018/genreg/sec_d0e3039.shtml

Recording of Materials

Presentations which are made in relation to course work—including lectures—cannot be recorded in any electronic media without the permission of the presenter, whether the instructor, a classmate or guest lecturer.

Resources

The Graduate Calendar is the source of information about the University of Guelph's procedures, policies and regulations which apply to graduate programs:

<https://www.uoguelph.ca/registrar/calendars/graduate/2017-2018/index.shtml>

Presentation Slides

Whenever possible, copies of presentation slides will be made available on CourseLink.

Recommended Textbook:

Friis, RH. Essentials of Environmental Health, 1st edition. Jones and Bartlett (publishers), 2007. Available online through the University Library.

Other References, Journals and Websites:

Books

Moeller, D. W. Environmental health. eBook, 3rd edition. Harvard University Press 2005. Available online through UofG Library AN 282159.

Duncan, Kirsty. Environment and health: protecting our common future. WIT Press. Boston. (2008). RA566 .D86 2008.

Lippmann, Morton. Environmental toxicants: human exposures and their health effects. 2nd ed. Wiley. New York. (2000). RA565 .E58 2000.

Journals

Environmental Health <http://www.ehjournal.net/>

Environmental Health Perspectives <http://www.ehponline.org/>

Medline Plus – Environmental Health

<http://www.nlm.nih.gov/medlineplus/environmentalhealth.html>

Environmental Health and Toxicology – Specialized Information Services

<https://sis.nlm.nih.gov/enviro.html>

Environmental Health News <http://www.ehn.org/>

General Environmental Health Websites

Canada

Health Canada – Environmental and Workplace Health <http://www.hc-sc.gc.ca/ewh-semt/index-eng.php>

Public Health Agency of Canada <http://www.phac-aspc.gc.ca/index-eng.php>

Environment and Climate Change Canada <https://www.canada.ca/en/environment-climate-change.html>

Canadian Food Inspection Agency

<http://www.inspection.gc.ca/eng/1297964599443/1297965645317>

Canadian Environmental Assessment Agency

<https://www.canada.ca/en/environmental-assessment-agency.html>

National Collaborating Centre for Environmental Health <http://www.ncceh.ca/>

Environmental Health in Canada (NCCEH) <http://www.ncceh.ca/content/environmental-health-canada>

Public Health Ontario

<http://www.publichealthontario.ca/en/BrowseByTopic/EnvironmentalandOccupationalHealth/Pages/Environmental-and-Occupational-Health.aspx>

Ontario Ministry of the Environment and Climate Change:

Drinking water - <https://www.ontario.ca/page/drinking-water>

Air - <http://www.airqualityontario.com/>

Ontario Ministry of Agriculture Food and Rural Affairs

<http://www.omafra.gov.on.ca/english/index.html>

Emergency Management / Preparedness

- <https://www.emergencymanagementontario.ca/english/home.html>

- <http://www.health.gov.on.ca/en/pro/programs/emb/>

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<http://www.publichealthontario.ca/en/BrowseByTopic/EmergencyPreparedness/Pages/Emergency-Preparedness.aspx/Pages/Emergency-Preparedness.aspx>

- <https://www.canada.ca/en/public-health/services/emergency-preparedness-response.html>

Other provincial environmental public health agencies:

Alberta -

<http://www.health.alberta.ca/newsroom/pub-environmental-health.html>

British Columbia -

<http://www.bccdc.ca/our-services/service-areas/environmental-health>

Manitoba –

<http://www.gov.mb.ca/health/publichealth/environmentalhealth/index.html>

Newfoundland –

<http://www.health.gov.nl.ca/health/publichealth/envhealth/environmental.html>

Nova Scotia –

<http://novascotia.ca/dhw/environmental/>

New Brunswick-

http://www2.gnb.ca/content/gnb/en/departments/ocmoh/healthy_environments.html

Quebec - <http://sante.gouv.qc.ca/en/dossiers/sante-et-environnement/?source=accueil>

Saskatchewan –

<http://www.saskatchewan.ca/residents/environment-public-health-and-safety/environmental-health>

Children’s environmental health project <http://www.cape.ca/children/index.html>

Canadian Centre for Health and Safety in Agriculture <http://www.cchsa-ccssma.usask.ca/index.php>

US

US Environmental Protection Agency <http://www.epa.gov/>

Integrated Risk Information System (USEPA): <http://www.epa.gov/iris/index.html>

National Center for Environmental Assessment: <https://www.epa.gov/aboutepa/about-national-center-environmental-assessment-ncea>

National Toxicology Program: <https://ntp.niehs.nih.gov/>

Agency for Toxic Substances and Disease Registry: <http://www.atsdr.cdc.gov/>

CDC – National Center for Environmental Health <http://www.cdc.gov/NCEH/>

Environmental Health Links – US <http://phpartners.org/environmentalhealth.html>

National Institute of Environmental Health Sciences: <http://www.niehs.nih.gov/>

Minnesota Environmental Health <http://www.health.state.mn.us/divs/eh/index.html>

Healthy People 2020: Environmental Health

<http://www.healthypeople.gov/2020/topicsobjectives2020/overview.aspx?topicid=12>

Oregon Office of Environmental Public Health

<http://public.health.oregon.gov/HealthyEnvironments/Pages/index.aspx>

International

WHO Environmental Health http://www.who.int/topics/environmental_health/en/

General Topics

Introduction to environmental health, environmental epidemiology, policy, regulation, water, pesticides and other environmental toxins, food, water & air quality, ionizing and non-ionizing radiation, solid and liquid wastes, climate change and public health.

These will be addressed through a combination of lectures, guest lectures, case studies, group work and student presentations.

Class Schedule – Class times are 08:30-9:50 unless otherwise indicated and will take place in rooms PAHL 1812. Subject to change based on guest speaker availability.

LECTURES	Room	Topic	Text Readings
Tuesday, January 9	PAHL 1812	Introduction to EPH	Chapter 1
Thursday, January 11	PAHL 1812	EH epidemiology	Chapter 2
Tuesday, January 16	PAHL 1812	EH epi / case study	Chapter 2
Thursday, January 18	PAHL 1812	EH toxicology	Chapter 3
Tuesday, January 23	PAHL 1812	EH policy and regulation in Canada EH policy and regulation - cases	Chapter 4
Thursday, January 25	PAHL 1812	Food safety	Chapter 11
Tuesday, January 30	PAHL 1812	Case study – food safety	
Thursday, February 1	PAHL 1812	Zoonotic and vector-borne diseases	Chapter 5
Tuesday, February 6	PAHL 1812	Toxic metals and elements	Chapter 6
Thursday, February 8 (double class – 08:30-11:20, with POPM*6550)	PAHL 1812	Guest, Dr. Ray Copes, risk assessment, management and communication	Review risk assessment and related policy in Chapters 3&4
Tuesday, February 13	PAHL 1812	Pesticides and other organic chemicals	Chapter 7
Thursday, February 15	PAHL 1812	Radiation	Chapter 8
MIDWINTER BREAK (week of February 19)			
Tuesday, February 27	PAHL 1812	Water quality	Chapter 9
Thursday, March 1	PAHL 1812	Case study - water	
Tuesday, March 6	PAHL 1812	Air quality	Chapter 10
Thursday, March 8	PAHL	Solid and liquid wastes;	Chapters 12 & 14

	1812	Injuries	
Tuesday, March 13	PAHL 1812	Emerging EH issues: health effects of climate change	
Thursday, March 15	PAHL 1812	Emerging EH issues: built environment	
Tuesday, March 20	PAHL 1812	Guest, Adam Miller: Public health emergency management	
Thursday, March 22		No class	
Tuesday, March 27	PAHL 1812	Student presentations	
Tuesday, March 29	PAHL 1812	Student presentations	
Thursday, April 3	PAHL 1812	Student presentations	
Tuesday, April 5	PAHL 1812	Student presentations	